

C.) REMARKS

This Response is filed in response to the Office Action dated February 8, 2006.

Upon entry of this Response, claims 1-24 will be pending in the Application.

In the outstanding Office Action, the Examiner rejected claims 1-7 under 35 U.S.C. § 103(a) as being unpatentable over Zhou (U.S. Patent No. 6,804,127) in view of Kumar et al. (U.S. Patent No. 6,023,137) and Rozman (U.S. Patent No. 6,252,751); and rejected claims 8-24 under 35 U.S.C. § 103(a) as being unpatentable over over Zhou (U.S. Patent No. 6,804,127) in view of Kumar et al. (U.S. Patent No. 6,023,137) and Rozman (U.S. Patent No. 6,252,751) and further in view of Rafuse, Jr. et al. (U.S. Patent No. 5,797,729).

Rejection under 35 U.S.C. 103

A. Rejection of claims 1-7

The Examiner rejected claims 1-7 under 35 U.S.C. § 103(a) as being unpatentable over Zhou (U.S. Patent No. 6,804,127), hereafter referred to as "Zhou," in view of Kumar et al. (U.S. Patent No. 6,023,137), hereafter referred to as "Kumar," and Rozman (U.S. Patent No. 6,252,751), hereafter referred to as "Rozman."

Specifically, the Examiner stated that

1. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou, Patent No. 6,804,127, in view of Kumar et al., Patent No. 6,023,137 and Rozman, Patent No. 6,252,751. With respect to claim 1, Zhou teaches an AC/DC/AC power conversion system, which comprises a variable speed drive. The variable speed drive [Fig. 3a, 1] comprises a converter stage [Fig. 3a, 10] to converter an AC voltage to a DC voltage, the converter stage being configured to be electrically connectable to an AC power source [Fig. 3a, 3, Col. 4, lines 64-67], and a DC link stage [Fig. 3a, 30] to filter and store energy from the converter stage, the DC link stage being electrically connected to the converter stage [Col. 5, lines 8-9, Col. 6, lines 43-46]. However, Zhou does not disclose an inverter

stage comprising a plurality of inverters electrically connected in parallel to the DC link stage and a plurality of connecting mechanisms connected in series between an inverter of the plurality of inverters and a corresponding motor of the plurality of motors.

Kumar teaches a method and apparatus for using a traction inverter to supply AC electric power for non-traction motor applications. Kumar teaches an inverter stage [Fig. 3, INV 1-6] comprising a plurality of inverters electrically connected in parallel to the DC link stage, each inverter of the plurality of inverters [Fig. 3, INV 4-5] being configured to convert a DC voltage to an AC voltage to power a corresponding motor of a plurality of motors [Fig. 3, TM4, TM5], and each inverter of the plurality of inverters being configured to operate substantially independently of other inverters of the plurality of inverters; and a plurality of connecting mechanisms [Fig. 3, 60, or Fig. 5, 80], each connecting mechanism of the plurality of connecting mechanisms being connected in series between an inverter of the plurality of inverters and a corresponding motor of the plurality of motors.

Rozman teaches a method and apparatus for distributing alternating electrical current to motors via a direct current bus. Rozman teaches a plurality of connecting mechanisms wherein each connecting mechanism being configured to disconnect an inverter from a corresponding motor in response to receiving a control signal [Fig. 1, 16, Abstract, lines 8-17].

All three teachings are related by being variable speed drives for distributing alternating electrical current to motors via a converter stage and an inverter stage. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Rozman and Kumar,

which teaches an inverter stage, a plurality of connecting mechanisms and a control panel, with the power conversion system of Zhou because Kumar teaches that it is known to use a plurality of inverter/motor units, which avoids the use of a single large inverter that may be subject to failure, with Rozman teaching that it is known to connect a plurality of load control units to a central controller to increase the ability of the system to handle the failure of one of the load/inverter branches.

Applicants respectfully traverse the rejection of claims 1-7 under 35 U.S.C. § 103(a).

Zhou, as understood, is directed to an AC/DC/AC power converter that requires only a small capacitance for its DC link and, as such, does not use any electrolytic capacitors. A controller capable of fast monitoring the DC bus voltage is able to quickly disconnect the capacitor out of either input or output energy path to prevent the capacitor from being charged to over-voltage.

Kumar, as understood, is directed to a locomotive having at least one alternating current (AC) electric traction motor and at least one power inverter having output terminals connected in circuit with the motor for supplying controlled frequency power to the motor. The inverter includes a plurality of controllable electric valves for supplying controlled frequency electric power to the motor by inversion of direct current (DC) power supplied to input terminals of the inverter. A switching apparatus is provided for coupling the output terminals of at least one inverter with one of the output terminals of the inverter to an electric motor connected for driving a lubrication pump, to respective ones of the armature winding terminals of the alternator or to excitation windings of the AC electric traction motor. Preferably, the electric valves of the inverter are gate turn-off switching devices.

Rozman, as understood, is directed to a system where AC power is supplied to a single active rectifier circuit that develops DC power for a DC distribution system. The DC distribution system is coupled to a plurality of motor drive units that convert the DC power into properly conditioned AC power for operating associated motors. In the motor drive unit, a contactor is used to couple the motor drive unit to the DC distribution system. When the contactor is closed,

DC power preferably passes to an inverter, which converts the DC power back into AC power for an AC motor. In the event of a fault in one of the drive units, fault isolation may be accomplished by individually turning off each motor drive in sequence via the associated contactor to determine the faulty drive unit. Alternatively, all of the motor drive units may be turned off and then individually turned back on until the fault reappears. Once the fault reappears, the faulty unit is identified and disabled and the remaining units are turned back on.

In contrast, independent claim 1, as amended, recites a drive system for a plurality of motors comprising: a variable speed drive, the variable speed drive comprising: a converter stage to convert an input AC voltage to a DC voltage, the converter stage being configured to be electrically connectable to an AC power source; a DC link stage to filter and store energy from the converter stage, the DC link stage being electrically connected to the converter stage; an inverter stage comprising a plurality of inverters electrically connected in parallel to the DC link stage, each inverter of the plurality of inverters being configured to convert a DC voltage to an output AC voltage to power a corresponding motor of a plurality of motors, and each inverter of the plurality of inverters being configured to operate substantially independently of other inverters of the plurality of inverters; and wherein the converter stage is configured to provide a boosted DC voltage to the DC link stage and each inverter of the plurality of inverters is configured to provide an output AC voltage greater than the input AC voltage; and a plurality of connecting mechanisms, each connecting mechanism of the plurality of connecting mechanisms being connected in series between an inverter of the plurality of inverters and a corresponding motor of the plurality of motors, and wherein each connecting mechanism being configured to disconnect an inverter from a corresponding motor in response to receiving a control signal.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

See Manual of Patent Examining Procedure, 8th Edition, Revision 4, (MPEP) § 2143.03.

Several of the features recited by Applicant in independent claim 1 are not taught or suggested by Zhou, Kumar and Rozman. First, Zhou, Kumar and Rozman do not teach or suggest that the converter stage is configured to provide a boosted DC voltage to the DC link stage and each inverter of the plurality of inverters is configured to provide an output AC voltage greater than the input AC voltage. The converters/rectifiers in Zhou, Kumar and Rozman do not provide a boosted DC voltage to the DC link as recited in claim 1. Furthermore, the inverters in Zhou, Kumar and Rozman also do not provide an output AC voltage greater than the input AC voltage as recited in claim 1. There is nothing in Zhou, Kumar or Rozman that teaches or suggests that the converter stage is configured to provide a boosted DC voltage to the DC link stage or that each inverter of the plurality of inverters is configured to provide an output AC voltage greater than the input AC voltage.

Next, Applicant submits that the Examiner has improperly combined Zhou, Kumar and Rozman.

In making the assessment of differences, section 103 specifically requires consideration of the claimed invention “as a whole.” Inventions typically are new combinations of existing principles or features. *Env'tl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698 [218 USPQ 865] (Fed. Cir. 1983) (noting that “virtually all [inventions] are combinations of old elements.”). The “as a whole” instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result – often the very definition of invention.

Section 103 precludes this hindsight discounting of the value of new combinations by requiring assessment of the invention as a whole. This court has provided further assurance of an “as a whole” assessment of the invention under §103 by requiring a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would select the various elements from the prior art and combine them in the claimed manner. In other words, the examiner or court must show some suggestion or motivation, before the invention itself, to make the new combination. See *In re Rouffet*, 149 F.3d 1350, 1355-56 [47 USPQ2d 1453] (Fed. Cir. 1998).

Ruiz v. A.B. Chance Co., 357 F.3d 1270, 1276, 69 USPQ2d 1686, 1690 (Fed. Cir. 2004)

Furthermore, "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination." *See* MPEP, Section 2143.01.

Applicant respectfully submits that the Examiner has improperly combined Zhou and Kumar and Rozman. The Examiner has provided no teaching or suggestion in Zhou that would indicate the desirability of incorporating into Zhou the multiple inverters of Kumar and Rozman, nor has the Examiner cited any passage in Kumar and Rozman that would indicate that the inverters of Kumar and Rozman can be used in the variable speed drive of Zhou. The Examiner makes statements that "it is known to use a plurality of inverter/motor units, which avoids the use of a single large inverter" and that "it is known to connect a plurality of load control units to a central controller to increase the ability of the system to handle the failure of one the load/inverter branches." However, the Examiner's statements of what is known in the art is not a suitable basis for combining references. "A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993)." *See* MPEP, Section 2143.01. Thus, Applicant respectfully submits that the Examiner has reached his conclusion based on the teachings in Applicant's specification, which is impermissible hindsight reasoning by the Examiner.

In addition, Zhou teaches away from the use of multiple inverters as recited by Applicant. In Zhou, the goal of the invention is to reduce the capacitance at the DC link so as to remove the need for electrolytic capacitors in the variable speed drive design. However, this reduced capacitance in the DC link would not be able to support the DC voltage requirements imposed by multiple inverters. It would seem clear that the goal of lowering the capacitance of the DC link in Zhou would teach away from any proposed combination to add multiple inverters to Zhou. The examiner is reminded that a "prior art reference must be considered in its entirety, i.e., as a

whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)." See MPEP § 2141.03.

Next, the Examiner's proposed modification of Zhou would render Zhou unsatisfactory for its intended purpose and would change the principle of operation of Zhou. The Examiner is reminded that "[i]f the proposed modification or combination of the prior art would change the principle or operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." See MPEP § 2143.01. Furthermore, "[i]f [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." See MPEP § 2143.01. The system in Zhou operates with non-electrolytic capacitors having reduced capacitance in the DC link. The Examiner's attempt to introduce additional inverters into the operation of Zhou would impose additional voltages on the capacitors in Zhou and, as such, result in frequent over-voltage tripping in the system of Zhou. By introducing multiple inverters into Zhou, the system in Zhou would require additional capacitance and not be satisfactory for its intended purpose because the capacitors in Zhou would have to be changed or modified from their compact size to avoid frequent trips of the variable speed drive.

Further, Applicant submits that Kumar is non-analogous art with respect to Applicant's invention as recited in independent claim 1. As discussed above, Kumar is directed to power system for a locomotive. In contrast, Applicant's invention as recited in independent claim 1 is directed to a variable speed drive for multiple motors. Applicant submits that one skilled in the art of variable speed drives would not look to a reference directed to locomotive power systems to solve problems in the variable speed drive field. In addition, the Examiner has cited no passage in Kumar that would indicate that the power system of Kumar could be used for a variable speed drive. Furthermore, Applicant has not been able to locate a passage in Kumar that teaches or suggests that the inverters in Kumar are actually part of a variable speed drive. Thus, Applicant submits that the Examiner has improperly combined Zhou and Kumar and as such Zhou and Kumar cannot be used to reject independent claim 1.

Furthermore, in view of the above, dependent claims 2-7 are also believed to be distinguishable from Zhou, Kumar and Rozman and therefore are not anticipated nor rendered obvious by Zhou, Kumar and Rozman. In addition, claims 2-7 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 1-7 are not anticipated nor rendered obvious by Zhou, Kumar and Rozman and are therefore allowable.

B. Rejection of claims 8-24

The Examiner rejected claims 8-24 under 35 U.S.C. § 103(a) as being unpatentable over Zhou in view of Kumar and Rozman and in further view of Rafuse, Jr. et al. (U.S. Patent No. 5,797,729), hereafter referred to as "Rafuse."

Specifically, the Examiner stated that

2. Claims 8-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou, Patent No. 6,804,127, in view of Kumar et al., Patent No. 6,023,137 and Rozman, Patent No. 6,252,751 as applied to claims 1-7 above, and further in view of Rafuse, Jr. et al., Patent No. 5,797,729. With respect to claim 8, Zhou teaches an AC/DC/AC power conversion system, which comprises a variable speed drive. The variable speed drive [Fig. 3a, 1] comprises a converter stage [Fig. 3a, 10] and a DC link stage [Fig. 3a, 30].

Kumar teaches a method and apparatus for using a traction inverter to supply AC electric power for non-traction motor applications. Kumar teaches an inverter stage [Fig. 3, INV 1-6], the inverter stage having a plurality of inverters [Fig. 3, INV 1-6] each electrically connected in parallel to the DC link stage and each powering a corresponding motor of a plurality of motors [Fig. 3, TM1-6]; a plurality of contactors [Fig. 3, 60, or Fig. 5, 80], each contactor of the plurality of contactors being connected in series between an inverter of the plurality of inverters [Fig. 3, INV1-6] and a corresponding motor of the plurality of motors [Fig. 3, TM1-6].

Rozman teaches a method an apparatus for distributing alternating

electrical current to motors via a direct current bus. Rozman teaches a plurality of contactors wherein each contactor being configured to enable or disable a connection between the inverter and the corresponding motor of the plurality of motors in response to receiving a control signal [Fig. 1, 16, Abstract, lines 8-17].

The references do not teach providing a refrigeration system with the drive system for a plurality of motors. However, Rafuse teaches a refrigeration system having a plurality of variable speed compressors, the refrigeration system comprising a plurality of compressors [Fig. 1, 10, 12, 14], each compressor of the plurality of compressors being driven by a corresponding motor [Fig. 1, 34, 36, 38], the plurality of compressors being incorporated into at least one refrigerant circuit [Fig. 1], each refrigerant circuit comprising at least one compressor of the plurality of compressors [Fig. 1, 10, 12, 14], a condenser arrangement [Fig. 1, 22] and an evaporator arrangement [Fig. 1, 16] connected in a closed refrigerant loop.

All four teachings are related by being variable speed drives for distributing alternating electrical current to motors via a converter stage and an inverter stage. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Rozman, Kumar, and Zhou, which teaches a variable speed drive and a plurality of contactors, with the refrigeration system having a plurality of variable speed compressors of Rafuse for the benefit of increasing the efficiency of the refrigeration system employing variable speed compressors.

Applicants respectfully traverse the rejection of claims 8-24 under 35 U.S.C. § 103(a).

Zhou is directed to an AC/DC/AC power converter system that does not use electrolytic capacitors as discussed in greater detail above.

Kumar is directed to a switching apparatus for the output of an inverter in a locomotive power system as discussed in greater detail above.

Rozman is directed to a system having a DC distribution system that is coupled to a plurality of motor drive units that convert the DC power into properly conditioned AC power as discussed in greater detail above.

Rafuse, as understood, is directed to a refrigeration system controller capable of controlling a plurality of variable speed compressors that share a common discharge line and a common suction line. Each of the variable speed compressors includes a compressor drive with a variable frequency drive to generate the desired output speed of the compressor. The controller operates each variable speed compressor at a speed substantially the same as the other energized variable speed compressors by determining a required compressor capacity for a refrigeration load, and energizing a combination of the variable speed compressors that provides the required compressor capacity and has a higher energy efficiency ratio than other combinations of compressors.

In contrast, independent claim 8, as amended, recites a chiller system comprising: a plurality of compressors, each compressor of the plurality of compressors being driven by a corresponding motor, the plurality of compressors being incorporated into at least one refrigerant circuit, each refrigerant circuit comprising at least one compressor of the plurality of compressors, a condenser arrangement and an evaporator arrangement connected in a closed refrigerant loop; a variable speed drive to power the corresponding motors of the plurality of compressors, the variable speed drive being configured to provide an output voltage greater than the input voltage to the variable speed drive, the variable speed drive comprising a converter stage, a DC link stage and an inverter stage, the inverter stage having a plurality of inverters each electrically connected in parallel to the DC link stage and each powering a corresponding motor of a compressor of the plurality of compressors; a plurality of contactors, each contactor of the plurality of contactors being connected in series between an inverter of the plurality of inverters and a corresponding motor of a compressor of the plurality of compressors, and wherein each contactor being configured to enable or disable a connection between the inverter and the

corresponding motor of a compressor of the plurality of compressors in response to receiving a control signal.

Independent claim 19, as amended, recites a drive system for a multiple compressor chiller system having a plurality of motors, the drive system comprising: a variable speed drive, the variable speed drive comprising: a converter stage to convert an input AC voltage to a DC voltage, the converter stage being configured to be electrically connectable to an AC power source; a DC link stage to filter and store energy from the converter stage, the DC link stage being electrically connected to the converter stage; an inverter stage comprising a plurality of inverters electrically connected in parallel to the DC link stage, each inverter of the plurality of inverters being configured to convert a DC voltage to an output AC voltage to power a corresponding motor of a plurality of motors, and each inverter of the plurality of inverters being configured to operate substantially independently of other inverters of the plurality of inverters; and wherein the converter stage is configured to provide a boosted DC voltage to the DC link stage and each inverter of the plurality of inverters is configured to provide an output AC voltage greater than the input AC voltage; and means for isolating a motor of the plurality of motors from other motors of the plurality of motors in response to detecting a fault condition in the motor of the plurality of motors.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Several of the features recited by Applicant in independent claims 8 and 19 are not taught or suggested by Zhou, Kumar, Rozman and Rafuse. First, Zhou, Kumar, Rozman and Rafuse do not teach or suggest that the variable speed drive being configured to provide an output voltage greater than the input voltage to the variable speed drive as recited in claim 8 nor that the converter stage is configured to provide a boosted DC voltage to the DC link stage and each inverter of the plurality of inverters is configured to provide an output AC voltage greater than the input AC voltage as recited in claim 19. The converters/rectifiers in Zhou, Kumar, Rozman

and Rafuse do not provide a boosted DC voltage to the DC link as recited in claim 19. Furthermore, the inverters in Zhou, Kumar, Rozman and Rafuse also do not provide an output AC voltage greater than the input AC voltage as recited in claims 8 and 19. There is nothing in Zhou, Kumar, Rozman and Rafuse that teaches or suggests that the converter stage is configured to provide a boosted DC voltage to the DC link stage or that each inverter of the plurality of inverters is configured to provide an output AC voltage greater than the input AC voltage.

Next, Applicant submits that the Examiner has improperly combined Zhou, Kumar, Rozman and Rafuse.

In making the assessment of differences, section 103 specifically requires consideration of the claimed invention “as a whole.” Inventions typically are new combinations of existing principles or features. *Env'tl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698 [218 USPQ 865] (Fed. Cir. 1983) (noting that “virtually all [inventions] are combinations of old elements.”). The “as a whole” instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result – often the very definition of invention.

Section 103 precludes this hindsight discounting of the value of new combinations by requiring assessment of the invention as a whole. This court has provided further assurance of an “as a whole” assessment of the invention under §103 by requiring a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would select the various elements from the prior art and combine them in the claimed manner. In other words, the examiner or court must show some suggestion or motivation, before the invention itself, to make the new combination. See *In re Rouffet*, 149 F.3d 1350, 1355-56 [47 USPQ2d 1453] (Fed. Cir. 1998).

Ruiz v. A.B. Chance Co., 357 F.3d 1270, 1276, 69 USPQ2d 1686, 1690 (Fed. Cir. 2004)

Furthermore, “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination.” See MPEP, Section 2143.01.

Applicant respectfully submits that the Examiner has improperly combined Zhou, Kumar, Rozman and Rafuse. To begin, the Examiner has improperly combined Zhou, Kumar, and Rozman as discussed in detail above. Furthermore, the Examiner has provided no teaching or suggestion in Rafuse that would indicate the desirability of incorporating into Rafuse the multiple inverters of Zhou, Kumar and Rozman, nor has the Examiner cited any passage in Zhou, Kumar and Rozman that would indicate that the inverters of Zhou, Kumar and Rozman can be used in the compressor drives of Rafuse. The Examiner states that the combination is "for the benefit of increasing the efficiency of the refrigeration system employing variable speed compressors." However, as each compressor drive in Rafuse incorporates its own variable frequency drive, Applicant submits that one skilled in the art would not make the combination proposed by the Examiner because the system in Rafuse already has the advantage or benefit identified by the Examiner. Thus, Applicant respectfully submits that the Examiner has reached his conclusion based on the teachings in Applicant's specification, which is impermissible hindsight reasoning by the Examiner.

In addition, Zhou teaches away from the use of multiple inverters as recited by Applicant. In Zhou, the goal of the invention is to reduce the capacitance at the DC link so as to remove the need for electrolytic capacitors in the variable speed drive design. However, this reduced capacitance in the DC link would not be able to support the DC voltage requirements imposed by multiple inverters. It would seem clear that the goal of lowering the capacitance of the DC link in Zhou would teach away from any proposed combination to add multiple inverters to Zhou. The examiner is reminded that a "prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)." See MPEP § 2141.03.

Next, the Examiner's proposed modification of Zhou would render Zhou unsatisfactory for its intended purpose and would change the principle of operation of Zhou. The Examiner is reminded that "[i]f the proposed modification or combination of the prior art would change the principle or operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." See MPEP § 2143.01.

Furthermore, "[i]f [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." *See* MPEP § 2143.01. The system in Zhou operates with non-electrolytic capacitors having reduced capacitance in the DC link. The Examiner's attempt to introduce additional inverters into the operation of Zhou would impose additional voltages on the capacitors in Zhou and, as such, result in frequent over-voltage tripping in the system of Zhou. By introducing multiple inverters into Zhou, the system in Zhou would require additional capacitance and not be satisfactory for its intended purpose because the capacitors in Zhou would have to be changed or modified from their compact size to avoid frequent trips of the variable speed drive.

Further, Applicant submits that Kumar is non-analogous art with respect to Applicant's invention as recited in independent claims 8 and 19. As discussed above, Kumar is directed to power system for a locomotive. In contrast, Applicant's invention as recited in independent claims 8 and 19 are directed to a variable speed drive for multiple motors used with a chiller system. Applicant submits that one skilled in the art of variable speed drives would not look to a reference directed to locomotive power systems to solve problems in the variable speed drive field. In addition, the Examiner has cited no passage in Kumar that would indicate that the power system of Kumar could be used for a variable speed drive. Furthermore, Applicant has not been able to locate a passage in Kumar that teaches or suggests that the inverters in Kumar are actually part of a variable speed drive. Thus, Applicant submits that the Examiner has improperly combined Zhou and Kumar and as such Zhou and Kumar cannot be used to reject independent claims 8 and 19.

Furthermore, in view of the above, dependent claims 9-18 and 20-24 are also believed to be distinguishable from Zhou, Kumar, Rozman and Rafuse and therefore are not anticipated nor rendered obvious by Zhou, Kumar, Rozman and Rafuse. In addition, claims 9-18 and 20-24 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 8-24 are not anticipated nor rendered obvious by Zhou, Kumar, Rozman and Rafuse and are therefore allowable.

Information Disclosure Statement

In the outstanding Office Action, the Examiner attached an Information Disclosure Statement submitted by Applicant on February 27, 2004. On the Information Disclosure Statement, the Examiner initialed all of the listed references as being considered by the Examiner, but crossed-out the foreign references and non-patent publications as not being considered by the Examiner. Applicant requests that the Examiner explain why the crossed-out references were not considered, as these references were received by the USPTO, as evidenced by a stamped return receipt postcard, with the submission of the Information Disclosure Statement. Furthermore, these references are available as part of the Image File Wrapper for the Application on the USPTO's Public PAIR website. Thus, it appears to Applicant that the Examiner had no basis for refusing to consider the references. Applicant requests that the Examiner consider the crossed-out references and provide Applicant with a revised Information Disclosure Statement indicating that the references have been considered. As alternative, Applicant will accept the inclusion of the references on a Notice of References Cited (PTO-892) issued by the Examiner.

CONCLUSION

In view of the above, Applicant respectfully requests reconsideration of the Application and withdrawal of the outstanding rejections. As a result of the amendments and remarks presented herein, Applicant respectfully submits that claims 1-24 are not anticipated by nor rendered obvious by Zhou, Kumar, Rozman and Rafuse and thus, are in condition for allowance. As the claims are not anticipated by nor rendered obvious in view of the applied art, Applicant requests allowance of claims 1-24 in a timely manner. If the Examiner believes that prosecution of this Application could be expedited by a telephone conference, the Examiner is encouraged to contact the Applicant.

The Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 50-1059.

Respectfully submitted,
McNEES, WALLACE & NURICK

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Dated: May 8, 2006